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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,026	09/26/2003	Charlene S. Smith	1797A2	7705

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EXAMINER	
LAZORCIK, JASON L	

ART UNIT	PAPER NUMBER
1731	

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/672,026	SMITH ET AL.	
	Examiner	Art Unit	
	Jason L. Lazorcik	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8,10,11,13 and 16-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8,10,11,13 and 16-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *09/06/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 8, 10-11, 13, and 16-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The definition of a "boundary line" as applied in Claim 8, line 16 fails to set forth any structural limitations on the float glass chamber. Further in the immediate context, the "boundary line" is understood to be an arbitrary, varying demarcation within said float glass chamber which is locally dependent upon the specific operating conditions of the chamber (e.g. inlet temperature set point, minor fluctuations in process temperature). The term "boundary line" is therefore rendered indefinite for failing to set forth the meets and bounds of patent protection intended by the applicant.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8, 10-11, and 16-17 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Taylor (3,337,322).

Specifically with respect to Claims 8 and 16-17, the immediate reference (C2 L6-16) describes a chamber for the manufacture of flat glass wherein the glass sheet is supported on a bath of molten tin which apparatus is conventionally referred to as a float glass chamber. The method disclosed is understood to include melting a glass composition to form a glass melt and pouring said melt into a float glass chamber.

With respect to the float glass chamber, Taylor discloses that the glass is cooled as it is advanced from the chamber inlet to the chamber outlet (C5 L29-44). From this statement it is understood that there is a "hot section" beginning at the chamber inlet, a "cold section" terminating at the chamber outlet, and that a boundary or location must inherently exist within said chamber wherein the chamber temperature falls below a value between said inlet temperature and said outlet temperature. This thermal boundary line is here understood to constitute the claimed boundary line between the hot section or "first chamber section" and the cold section or the "second chamber section". Further where Taylor discloses (C5 L32-43) that the inlet temperature is ***at least*** 1000°C and that the outlet temperature is about 600°C, a location must therefore exist between the inlet and the outlet such that the temperature reaches a value between "at least" 1000°C and about 600°C. A location or "Boundary" can be defined in the chamber where the temperature reaches a threshold temperature value of 871°C (1600°F) which is between *at least* 1000°C and about 600°C.

The float glass chamber is broadly understood to present an upper plenum in the region of the heaters (26) and a lower plenum in the region of the outlet of ducts (20a) and (20b). Where the inlet end of the bath is of the order of 1000°C (Column 5, Line 4)

and a protective atmosphere of 99.5% nitrogen and 0.5% hydrogen is fed through the ducts 20a (Column 4, Lines 24-26), the disclosed process is understood to control "an atmosphere" in the lower plenum of the first chamber section such that the volume percent concentration of hydrogen is between 0 to 3 % as claimed. Further, Taylor discloses that a protective atmosphere is fed through ducts 20b consisting of 95% nitrogen and 5% hydrogen, and that the region of the bath in the immediate vicinity of the outlet of said ducts 20b is normally about 600°C (Column 4, Lines 34-47). It is therefore understood that "an atmosphere" in the lower plenum of the second chamber is controlled to have a volume percent hydrogen between 0 and 10% as claimed.

With respect to Claim 10, a location can be defined in the chamber where the temperature reaches a threshold temperature value of 982°C (1800°F) which is between *at least* 1000°C and about 600°C.

Regarding Claim 11, since Taylor indicates an inlet temperature of ***at least*** 1000°C, he does not preclude temperatures in excess of say 1148°C (2100°F). Therefore, a location can be defined in the chamber where the temperature reaches a threshold temperature value of 1148°C (2100°F) which is between ***at least*** 1000°C and about 600°C.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor (3,337,322) as applied under 35 USC 102(b) in the rejection of Claim 8 and in further view of Kobayashi (US 6,532,771) and prior art teaching presented in the body of the present specification.

With respect to Claim 13, Taylor outlines (see Claim 8 rejection above) a method of melting a glass composition, pouring said melt into a float chamber having the appropriate hot and cold sections, a boundary line with threshold temperature, and a lower plenum atmosphere of less than 3% hydrogen. Taylor does not teach that the as prepared glass melt should have a specific water content equal to or greater than 0.035 weight percent of the composition. Kobayashi teaches the use of a glass melting furnace utilizing an enriched oxygen content fuel as a means for increasing the fuel efficiency of said furnace. Kobayashi (C1 L48-54) continues by asserting;

"The concentration of water vapor in the atmosphere of an oxy-fuel fired furnace is typically in a range between 50 to 65% as compared with 15 to 20% for an air-fuel fired furnace. A higher water vapor pressure in the atmosphere increases dissolution of water into glassmelt"

It is further presented in the immediate specification (Page 2 Lines 3-4) that "typically, glass melted in an oxy-fuel furnace contains more than 0.045 weight percent water based on the total weight of the composition"

It would have therefore been obvious to one of ordinary skill in the art at the time of the invention to modify the Taylor process to incorporate an oxy-fuel fired furnace in the glass melt forehearth ***to improve the fuel-efficiency of said melting step***. By virtue of this incorporation, the glass melt would have obviously consisted of a water content of more than 0.045 weight percent water as suggested by prior art teaching or "equal to or greater than 0.035 weight percent water" as claimed.

With respect to Claim 19, Taylor outlines (see Claim 16 rejection above) a method of melting a glass composition, pouring said melt into a float chamber having the appropriate hot and cold sections, a boundary line with threshold temperature, and a lower plenum wherein an atmosphere of less than 3% hydrogen is pumped into said hot section. Taylor does not teach the use of an oxy-fuel fired furnace to melt the glass prior to pouring into the float chamber. Kobayashi (C1 L19-22, C1 L40-46) teaches the use of a glass melting furnace utilizing an enriched oxygen content fuel or "oxy-fuel" as a means for increasing the fuel efficiency of said furnace in the production of float glass. It would have therefore been obvious to one of ordinary skill in the art at the time of the invention to modify the Taylor process to incorporate an oxy-fuel fired furnace in the glass melt forehearth ***to improve the fuel-efficiency of said melting step as noted by Kobayashi***.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor (3,337,322) in view of Landa (US2002/0059811 A1).

Regarding Claim 18, Taylor teaches all the elements of Claim 8 as outlined above. Taylor does not indicate that the glass utilized in the float glass chamber is to be of a specific composition. Landa teaches the use of a preferred soda-lime-silica glass composition derived from a float glass process, claimed as ***a "conventional float glass composition"***, and having a composition of (see ¶ [0034] and associated Table):

1. SiO_2 – 68 to 75%
2. Al_2O_3 – 0-1%
3. Na_2O – 10-18%
4. MgO – 0-5%
5. CaO – 5 to 15%

The float glass utilized in the Landa reference reads directly on the claimed composition of 65-75% SiO_2, 10-20% Na_2O, 5-15% CaO, 0-5%MgO, 0-5% Al_2O_3, 0-5% K_2O, and 0-2% Fe_2O_3. It would have been obvious for one of ordinary skill in the art to utilize a ***"conventional float glass composition"*** as described by Landa in the float glass process as detailed by Taylor in order to make a float glass ribbon.

Response to Arguments

Applicant's arguments filed September 6, 2006 have been fully considered but they are not persuasive.

1) applicant's argument that Taylor does not teach or suggest that the float glass chamber does not comprise a first and second sections defined by a threshold temperature rather than a physical boundary. This argument is not persuasive since, as reiterated in the rejection of Claim 8 above, the float glass chamber has an inlet temperature higher than a stated outlet temperature and therefore ***necessarily and inherently*** exhibits a boundary between these points which is defined by a "threshold temperature". The mere fact that the prior art does not explicitly indicate or define such a location within the disclosed system does not negate its inherent existence. Further, as indicated both in the rejection above and in the previous office action, Taylor does provide control over an atmosphere of the lower plenum of the first and second sections.

2) Applicants argument regarding a lack of motivation to combine the teachings of Kobayashi with the method disclosed by Taylor is found not persuasive for the following reason. Kobayashi teaches the use of a glass melting furnace utilizing an enriched oxygen content fuel as a means for increasing the fuel efficiency of said furnace. It would have therefore been obvious to one of ordinary skill in the art at the time of the invention to modify the Taylor process to incorporate an oxy-fuel fired furnace in the glass melt forehearth ***to improve the fuel-efficiency of said melting step as noted by Kobayashi***.

3) Applicants argument regarding a lack of motivation to combine the teachings of Landa with the method disclosed by Taylor is found not persuasive for the following reason. Landa explicitly teaches the use of a preferred soda-lime-silica glass

composition derived from a float glass process, claimed as ***a "conventional float glass composition"*** (see ¶ [0034]). It would have been readily evident to one of ordinary skill in the art to utilize a glass composition recognized as "conventional" in a float glass process as disclosed by Taylor.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L. Lazorcik whose telephone number is (571) 272-2217. The examiner can normally be reached on Monday through Friday 8:30 am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JLL

ERIC HUG
PRIMARY EXAMINER